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Food and Agriculture Section

Special Memorandum EC8

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By
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THE WAR AND GERMAN NUTRITION

December 5, 1941

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Food and Agriculture Section
Special Memorandum EC 8

SUMMARY

The present dietary situation in Germany indicates that calories, protein, and minerals are consumed in sufficient quantities to prevent undermining of health and working efficiency in the immediate future.

The most serious deficiencies are in the vitamins, but the results will probably be delayed for some time. These vitamin deficiencies will affect adults more than children because of the whole milk rations and larger citrus fruit consumption of the latter. If continued, such deficiencies will eventually result in loss of health, working efficiency and morale.

THE WAR AND GERMAN NUTRITION

An analysis of the diets in Greater Germany since June 2, 1941 (when the reduced meat ration became effective) indicates that there is no immediate danger of starvation either for the civilian population as a whole or for any group within it. However, working efficiency may already have been somewhat impaired, and health will probably suffer eventually if the present diets are maintained over the next few years.

I. Calory consumption

The energy value of the diet is the most important factor in appraising the working capacity of the population in the short run. A basic allowance of 2,400 calories per day is required to maintain the body of the average person over 12 years engaged only in sedentary work. Additional calories are needed in amounts varying with the length and intensity of physical activity. Table 1 shows the number of calories required per day for the different classes of the population on the assumptions that the "normal" consumer category includes those engaged in sedentary, light, and moderate work, and that all classes of adults work eight hours a day, except long and night workers, who are assumed to work

ten. An allowance of 75 calories per hour for moderate work, 150 for heavy work, and 300 for extra heavy work should be used if one wishes to alter requirements for changes in the length of the working day.

TABLE I[a]

	Normal	Long & Night Workers	Heavy Workers	Extra heavy Workers	Children 0-3 yrs	Children 3-6	Children 6-10	Children 10-14
Required per day[b]	2400-3000	3150	3600	4800	1000	1500	1800	2300
Estimated daily consumption, June, 1941	2660	3024	3525	4425	1754	1813	2064	2415
Surplus or deficit (%)	+11[c]	-4	-2	-8	+75	+20	+15	+5
Daily calory consumption, assuming restoration of pre-June 2 meat rations	2706	3024	3616	4516	1754	1813	2110	2461

a) Based on rations in effect June 2, 1941, as given in "Food Rationing in Germany", by J. H. Richter, Foreign Agriculture, October, 1941. Estimates in the above table also include other unrationed foods. Details of calculations and underlying assumptions are given in the Appendix.

b) Requirements are for men, who may be assumed to do most of the long, night, & heavy work. Women's requirements are somewhat lower except during pregnancy and lactation.

c) Rationing doubtless minimizes variations about average consumption. Therefore sedentary working people probably consume surplus calories, while those engaged in moderate physical activity suffer a deficit.

From the above table it is evident that the

rations do not represent actual consumption, particularly for children under 3 years. A 75 per cent calory surplus is almost a physical impossibility, and any surplus as great as 15 per cent is certainly unhealthy. The rations of farinaceous foods and of meats are the same for children in the 0-3 and 3-6 year groups. The rations of the 0-3 children represent an increase of more than 40 per cent for flour and 33 per cent for meats, as compared with pre-war consumption. This increase is all the more surprising since these children's average pre-war consumption of meat was adequate, and flour consumption excessive when compared with the "good" diet recommended by the Bureau of Home Economics.[1] The other children's flour rations are also excessive, though not to such a great degree. The only explanation I can offer for this is that some of this flour, ostensibly rationed to the children, actually goes to their parents, some of whom are slightly deficient in calories. While rations among adults are graduated to take care of the different physiological needs of different classes of workers, too great variations in rations would probably intensify social unrest, and therefore the children are given rations higher than their needs.

In connection with Table II (below), it should

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1. Yearbook of Agriculture, 1939, pp. 338 - 340

be noted that, while the workers suffer from a slight caloric deficit under the present rations, the consumption of the heavy and extra-heavy workers is considerably above that of the "normal" members of the pre-war population - many of whom have doubtless moved into the worker classes during the last two years. Table II shows the relative daily calory intake provided by flour, sugar, meat, fats and oils, cheese, and potatoes (which ordinarily provide about 80-85 per cent of all calories in the diet) for the different classes during the recent pre-war and war periods. Comparison of total calory intake for these two periods is not possible.

TABLE II

	Normal	Long & night workers	Heavy workers	Extra heavy workers	Children 0-3	Children 3-6	Children 6-10	Children 10-14
Prewar (1936-37)	2696	2696	3909	4130	952	1368	1921	2220
1940-41.....	1652	2407	3220	4120	1135	1474	1710	2060

The calory deficiencies shown in Table I are not serious except for the heavy workers, whose rations are probably supplemented from the children's share. In any event, it would require only an additional 700 grams of flour a week to make their diets adequate in energy value.

II. Protein and minerals

The protein allowance of all groups, both adults

and children, is well above the standard for all classes. The calcium allowance, however, is a bare minimum for adults and slightly above the minimum for most of the children (because of the whole milk rations of the latter.) Children in the 0-3-year-old group consume enough milk to provide them with the 50 per cent safety margin considered desirable by the Bureau of Home Economics. But children from 6 to 14 should be getting more calcium to insure adquate supplies for bone and tooth formation. Iron consumption is adequate for all. The worker groups, because of their relatively large meat and flour rations, plus their high potato consumption even have unusually wide margins of safety in this mineral.

III. Vitamins

It is not possible to make even approximate estimates of the vitamins consumed by different classes of the population. It is reasonable to assume, however, that the scarcity of fats and oils results in shortage of Vitamin D for most groups. This would be especially serious for young children, who would develop rickets. Infants should receive the equivalent of 2 teaspoonfuls of cod liver oil daily to meet their Vitamin D requirements. The 125 grams of fats and oils (about 10 per cent of which is fish oil) allotted weekly for children under 3 years would not be sufficient for their needs.

Supplies of Vitamin B1 may not be far below

adequacy for all classes since potatoes and legumes, as well as whole wheat flour, are good B1 source. Vitamin C likewise may be consumed in almost adequate quantities, since potatoes, tomatoes, and citrus fruit, leafy, green, and yellow vegetables, as well as other vegetables and fruits, are good sources. Probably Vitamin C consumption is fairly even for all population groups, since the children receive larger than average supplies of citrus fruit, the upper classes more fruit and tomatoes, and the working classes more cabbages and green beans.

Greater deficiencies probably occur in Vitamins A and G because of the scarcity of milk, cheese, eggs, butter, cream, and meat - which are rich sources of these Vitamins. Vitamin A as such occurs only in foods of animal origin, although the body can convert the carotene in leafy, green, and yellow vegetables to Vitamin A to some extent. But human beings do not utilize carotene very efficiently, and even the increase in vegetable consumption during 1940-41 has probably been insufficient to supplant the Vitamin A-rich animal food sources. Since 1940 synthetic Vitamin A has been added to margarine to make it nutritionally equivalent to butter - but whether this has been sufficient to counteract the deficiency is not known. The effects of this deficiency appearsfairly quickly. Complete absence of Vitamin A in the diet produces night blindness in 2 to 6 weeks. This period would, of course, be somewhat longer when some, though insufficient Vitamin A was being consumed, as in Germany at present.

It is possible that the children, because of their whole milk rations, do not suffer Vitamin A deficiency so severely as adults.

Indications are that present diets in Germany are insufficient to prevent pellagra, as they probably contain insufficient supplies of yeast, wheat germ, lean meat, green vegetables, and milk. Legumes (also a good source of the pellagra-preventive factor) may compensate for other deficiencies to some extent. Unlike Vitamin A deficiency, the effects of insufficient Vitamin G develop very slowly. Loss of strength and appetite and increased nervousness are the earliest symptoms. When these do occur, of course, they are definitely detrimental to working efficiency and morale. Extreme cases result in complete bodily and mental disintegration - but only after long periods of vitamin deficiency.

TABLE III

Calorie content of German diets, June 2, 1941 and subsequently, on the basis of rations and estimated consumption of unrationed foods*

	WORKERS				CHILDREN			
	Normal Consumers	Long & Night	Heavy	Extra Heavy	0-3	3-6	6-10	10-14
Flour equivalent 360	6450	7990	10250	12950	4000	4000	5000	7400
Sugar and/or marmalade 398 (as sugar equivalent)	1345	1345	1345	1345	1345	1345	1345	1345
Meat 320	1025	1535	2075	2560	640	640	1025	1025
Fats and Oils 900	2400	2620	3525	6640	1125	1685	2357	2357
Cheese 390	245	245	245	245	245	245	245	245
Curds 101	30	30	30	30	-	-	-	-
Whole Milk 69	-	-	-	-	3620	2415	1210	1210
Skimmed Milk 36	500	500	500	500	-	-	-	-
Eggs 70 per egg	105	105	105	105	105	105	105	105
Potatoes 85	5100	5100	5100	5100	600	1400	2000	2060
Legumes 349	0	300	300	300	150	150	300	300
Vegetables, fruit, tropical fruit and nuts	600	390	390	390	450	450	450	450
Alcoholic Beverages	400	400	400	400	-	-	-	-
Fish 180	260	260	260	260	-	260	260	260
Other foodstuffs	150	150	150	150	-	-	150	150
Total per week	18610	20970	24675	30975	12280	12695	14447	16907
Total per day	2660	2996	3525	4425	1754	1813	2064	2415

* See attached sheet for notes

Notes to Table III

Rations and quantities of other foods consumed taken from J. H. Richter, "Food Rationing in Germany", Foreign Agriculture, October 1941, supplemented by data from Statistiche Jahrbuch 1938 and 1927-28 budget data.

Small numbers over food indicate number of calories per 100 grams.

Flour - half wheat, half rye

Meat - 70% pork, 30% beef - both lean

Cheese - Roquefort, Swiss and Limburger

Curds - Cottage Cheese

Skimmed Milk - est. 1400 gm. per week for all adults.

Potatoes - 6000 gm. for all adults, and 680, 1700, 2410 and 3100 grams for children. Average per cap. consumption assumed 60 per cent above pre war.

Legumes - Average per cap. consumption 44 gm. with workers and children 6-14 consuming 85 gm., "normal" consumers none, and young children 42 gm.

Vegetables, fruit, tropical fruit, nuts - Assumed weekly average per cap. consumption of vegetables in 1940-41 to be 1060 gm., fruit 300 gm., and tropical fruit 140 gm. These amounts compare with 966, 766, and 159 gm. - average weekly consumption for 1933-37 (Statistische Jahrbuch) 1938. For details of consumption changes, see Table V

Fish - 145 gm. salted herring

Other foodstuff - Arbitrarily set at something less than 1 per cent of total calories for all groups considered together.

TABLE IV

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Estimated Protein and Calcium Content of German Diets, June 2, 1940
(grams per week)

	WORKERS				CHILDREN			
	Normal Consumers	Long and Night	Heavy	Extra Heavy	0 - 3	3 - 6	6 - 10	10 - 14
PROTEIN								
Flour equivalent 13%	300	375	474	600	183	183	231	345
Meat 18%	72	108	144	180	45	45	72	72
Potatoes 2 %	129	129	129	129	14	14	14	14
Legumes 25%	0	12	12	12	6	6	12	12
Cheese 25%	16	16	16	16	16	16	16	16
Curds 19%	6	6	6	6	-	-	-	-
Fish 20%	29	29	29	29	3	6	18	24
Whole milk 27%	-	-	-	-	184	123	61	61
Eggs 13%	8	8	8	8	8	8	8	8
Total protein per week	560	683	818	980	459	401	432	552
Total " " day	80	98	117	140	66	57	62	79
CALCIUM								
Fish	.13	.13	.13	.13	-	.13	.13	.13
Flour equivalent	.70	.88	1.11	1.40	.43	.43	.54	.81
Milk and cheese	1.18	1.18	1.18	1.18	6.70	4.50	2.50	2.50
Lentils	-	.09	.09	.09	.05	.05	.09	.09
Potatoes	.71	.71	.71	.71	.09	.20	.28	.31
Fruits and vegetables	.75	.59	.59	.59	.75	.75	.75	.75
Total calcium per week	3.47	3.58	3.81	4.10	8.02	6.06	4.29	4.59
Total " " day	.50	.51	.54	.59	1.15	.87	.61	.66

Protein and calcium estimated on the basis of same kinds and quantities of foods described in notes to Table III.

Percentages over specific foods indicate proportions of protein in a given weight (waste deducted). Calcium also calculated on a weight basis, using Bureau of Home Economics Figures.

TABLE IVb

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Estimated Iron Content of German Diets, June 2, 1941
(grams per week)

	WORKERS				CHILDREN			
	Normal Consumers	Long and Night	Heavy	Extra Heavy	0 - 3	3 - 6	6 - 10	10 - 14
Meat and fish	.01179	.01754	.02329	.02904	.00719	.00748	.01179	.01179
Flour	.04092	.05115	.06465	.08184	.02496	.02496	.03151	.04706
Potatoes	.05600	.05600	.05600	.05600	.00600	.01500	.02200	.02500
Lentils	-	.00750	.00750	.00750	.00375	.00375	.00750	.00750
Fruits & Vegetables	.01129	.00817	.00817	.00817	.00230	.00497	.00836	.01062
Milk	-	-	-	-	.01260	.00840	.00700	.00700
Eggs	.00200	.00200	.00200	.00200	.00200	.00200	.00200	.00200
Total iron per week	.12200	.14236	.16161	.18455	.05880	.06656	.09016	.11097
Total " " day	.01743	.02034	.02309	.02636	.00840	.00951	.01288	.01585
Required per day	.01500	.01500	.01500	.01500	.00600	.00800	.01100	.01300

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THE WAR AND GERMAN NUTRITION

R & A 84

December 5, 1941

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SUMMARY

The present dietary situation in Germany indicates that calories, protein, and minerals are consumed in sufficient quantities to prevent undermining of health and working efficiency in the immediate future.

The most serious deficiencies are in the vitamins, but the results will probably be delayed for some time. These vitamin deficiencies will affect adults more than children because of the whole milk rations and larger citrus fruit consumption of the latter. If continued, such deficiencies will eventually result in loss of health, working efficiency, and morale.

THE WAR AND GERMAN NUTRITION

An analysis of the diets in Greater Germany since June 2, 1941 (when the reduced meat ration became effective) indicates that there is no immediate danger of starvation either for the civilian population as a whole or for any group within it. However, working efficiency may already have been somewhat impaired, and health will probably suffer eventually if the present diets are maintained over the next few years.

I. Calory Consumption

The energy value of the diet is the most important factor in appraising the working capacity of the population in the short run. A basic allowance of 2,400 calories per day is required to maintain the body of the average person over 12 years engaged only in sedentary work. Additional calories are needed in amounts varying with length and intensity of physical activity. Table I shows the number of calories required per day for the different classes of the population on the assumptions that the "normal" consumer category includes those engaged in sedentary, light, and moderate work, and that all classes of adults work eight hours a day, except long and night workers, who are assumed to work

ten. An allowance of 75 calories per hour for moderate work, 150 for heavy work, and 300 for extra heavy work should be used if one wishes to alter requirements for changes in the length of the working day.

TABLE I[a]

	Normal	Long & night workers	Heavy workers	Extra heavy workers	Children 0-3 yrs.	Children 3-6	Children 6-10	Children 10-14
Required per day[b]	2400-3000	3150	3600	4800	1000	1500	1800	2300
Estimated daily consumption, June '41	2660	3024	3525	4425	1754	1813	2064	2415
Surplus or deficit (-)	+11[c]	-4	-2	-8	+75	+20	+15	+5
Daily calory consumption, assuming restoration of pre-June 2 meat rations	2706	3024	3616	4516	1754	1813	2110	2461

a) Based on rations in effect June 2, 1941, as given in "Food Rationing in Germany", by J. H. Richter, Foreign Agriculture, October, 1941. Estimates in the above table also include other unrationed foods. Details of calculations and underlying assumptions are given in the Appendix.

b) Requirements are for men, who may be assumed to do most of the long, night, & heavy work. Women's requirements are somewhat lower except during pregnancy and lactation.

c) Rationing doubtless minimizes variations about average consumption. Therefore sedentary working people probably consume surplus calories, while those engaged in moderate physical activity suffer a deficit.

From the above table it is evident that the

rations do not represent actual consumption, particularly for children under 3 years. A 75 per cent calory surplus is almost a physical impossibility; and any surplus as great as 15 per cent is certainly unhealthy. The rations of farinaceous foods and of meats are the same for children in the 0-3 and 3-6 year groups. The rations of the 0-3 children represent an increase of more than 40 per cent for flour and 33 per cent for meats, as compared with pre-war consumption. This increase is all the more surprising since these children's average pre-war consumption of meat was adequate, and flour consumption excessive when compared with the "good" diet recommended by the Bureau of Home Economics.[1] The other children's flour rations are also excessive, though not to such a great degree. The only explanation I can offer for this is that some of this flour, ostensibly rationed to the children, actually goes to their parents, some of whom are slightly deficient in calories. While rations among adults are graduated to take care of the different physiological needs of different classes of workers, too great variations in rations would probably intensify social unrest, and therefore the children are given rations higher than their needs.

In connection with Table II (below), it should

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1. Yearbook of Agriculture, 1939, pp. 338-340.

TABLE V

Estimated Weekly German Consumption of Specific Vegetables, Fruits, Tropical Fruits and Nuts, 1940-1941.

	Average per capita 1933 - 37 (grams)	Average per Capita (grams)	Soldiers and Normal Consumers (grams)	Workers and Farmers (grams)
Cabbage	300	418	418	418
Cauliflower	52	83	83	83
Kohlrabi	38	49	49	0
Green Beans	61	82	82	82
Cucumbers	72	110	110	110
Tomatoes	56	62	93	31
Spinach	22	35	45	25
Lettuce	48	82	123	41
Carrots	97	110	120	90
Other vegetables	220	-	-	-
Apples	401	-	-	-
Pears	136	110	145	75
Prunes	130	110	145	75
Cherries	47	35	30	40
Peaches	11	6	12	0
Apricots	20	11	22	0
Nuts	17	15	20	10
Oranges and Tangerines	68	70	105	35
Lemons	21	22	33	11
Bananas	32	33	46	20
Currents and raisins	18	16	16	16
Figs	5	6	9	3
Almonds	5	6	9	3

The 1940-41 quantities assume a 10 percent increase in vegetables, a 60 percent decrease in fruits, and a 17 percent decrease in tropical fruits compared with 1933-37.

Adjustments in the quantities of specific fruits and vegetables were made with regard to the increase in workers' total purchasing power, on the assumption that their dietary habits were about the same as in 1927-28. Workers and farmers were assumed to equal 50 percent of the adult population, and soldiers and normal consumers also 50 percent. Children were assumed to have the same consumption pattern as the average per capita, except that all the apples were allocated to children.

be noted that, while the workers suffer from a slight calorie deficit under the present rations, the consumption of the heavy and extra-heavy workers is considerably above that of the "normal" members of the pre-war population - many of whom have doubtless moved into the worker classes during the last two years. Table II shows the relative daily calory intake provided by flour, sugar, meat, fats and oils, cheese, and potatoes (which ordinarily provide about 80-85 per cent of all calories in the diet) for the different classes during the recent pre-war and the war periods. Comparison of total calory intake for these two periods is not possible.

TABLE II

	Normal	Long & night workers	Heavy workers	Extra heavy workers	Children			
					0-3	3-6	6-10	10-14
Prewar(1936-37)	2696	2696	3909	4130	952	1368	1921	2220
1940-41.....	1652	2407	3220	4120	1135	1474	1710	2060

The calory deficiencies shown in Table I are not serious except for the heavy workers, whose rations are probably supplemented from the children's share. In any event, it would require only an additional 700 grams of flour a week to make their diets adequate in energy value.

II. Protein and minerals

The protein allowance of all groups, both adults

and children, is well above the standard for all classes. The calcium allowance, however, is a bare minimum for adults and slightly above the minimum for most of the children (because of the whole milk rations of the latter.) Children in the 0-3-year-old group consume enough milk to provide them with the 50 per cent safety margin considered desirable by the Bureau of Home Economics. But children from 6 to 14 should be getting more calcium to insure adequate supplies for bone and tooth formation. Iron consumption is adequate for all. The worker groups, because of their relatively large meat and flour rations, plus their high potato consumption even have unusually wide margins of safety in this mineral.

III. Vitamins

It is not possible to make even approximate estimates of the vitamins consumed by different classes of the population. It is reasonable to assume, however, that the scarcity of fats and oils results in shortage of Vitamin D for most groups. This would be especially serious for young children, who would develop rickets. Infants should receive the equivalent of 2 teaspoonfuls of cod liver oil daily to meet their Vitamin D requirements. The 125 grams of fats and oils (about 10 per cent of which is fish oil) allotted weekly for children under 3 years would not be sufficient for their needs.

Supplies of Vitamin B1 may not be far below

adequacy for all classes since potatoes and legumes, as well as whole wheat flour, are good B1 source. Vitamin C likewise may be consumed in almost adequate quantities, since potatoes, tomatoes, and citrus fruit, leafy, green, and yellow vegetables, as well as other vegetables and fruits, are good sources. Probably Vitamin C consumption is fairly even for all population groups, since the children receive larger than average supplies of citrus fruit, the upper classes more fruit and tomatoes, and the working classes more cabbages and green beans.

Greater deficiencies probably occur in Vitamins A and G because of the scarcity of milk, cheese, eggs, butter, cream, and meat - which are rich sources of these Vitamins. Vitamin A as such occurs only in foods of animal origin, although the body can convert the carotene in leafy, green, and yellow vegetables to Vitamin A to some extent. But human beings do not utilize carotene very efficiently, and even the increase in vegetable consumption during 1940-41 has probably been insufficient to supplant the Vitamin A-rich animal food sources. Since 1940 synthetic Vitamin A has been added to margarine to make it nutritionally equivalent to butter--but whether this has been sufficient to counteract the deficiency is not known. The effects of this deficiency appear fairly quickly. Complete absence of Vitamin A in the diet produces night blindness in 2 to 6 weeks. This period would, of course, be somewhat longer when some, though insufficient,

Vitamin A was being consumed, as in Germany at present. It is possible that the children, because of their whole milk rations, do not suffer Vitamin A deficiency so severely as adults.

Indications are that present diets in Germany are insufficient to prevent pellagra, as they probably contain insufficient supplies of yeast, wheat germ, lean meat, green vegetables, and milk. Legumes (also a good source of the pellagra-preventive factor) may compensate for other deficiencies to some extent. Unlike Vitamin A deficiency, the effects of insufficient Vitamin G develop very slowly. Loss of strength and appetite and increased nervousness are the earliest symptoms. When these do occur, of course, they are definitely detrimental to working efficiency and morale. Extreme cases result in complete bodily and mental disintegration - but only after long periods of vitamin deficiency.

TABLE III

Caloric content of German diets, June 2, 1941 and subsequently, on the basis of rations and estimated consumption of unrationed foods*

	WORKERS				CHILDREN			
	Normal Consumers	Long and Night	Heavy	Extra Heavy	0 - 3	3 - 6	6 - 10	10 - 14
Flour equivalent 360	6480	7990	10250	12950	4000	4000	5000	7400
Sugar and/or marmalade 399 (as sugar equivalent)	1345	1345	1345	1345	1345	1345	1345	1345
Meat 320	1025	1535	2075	2560	640	640	1025	1025
Fats and Oils 900	2400	2620	3525	6640	1125	1685	2357	2357
Cheese 390	245	245	245	245	245	245	245	245
Curds 101	30	30	30	30	-	-	-	-
Whole Milk 69	-	-	-	-	3620	2415	1210	1210
Skimmed Milk 36	500	500	500	500	-	-	-	-
Eggs 70 per egg	105	105	105	105	105	105	105	105
Potatoes 85	5100	5100	5100	5100	800	1400	2000	2000
Legumes 349	0	300	300	300	150	150	300	300
Vegetables, fruit, tropical fruit and nuts	600	390	390	390	450	450	450	450
Alcoholic Beverages	400	400	400	400	-	-	-	-
Fish 180	260	260	260	260	-	260	260	260
Other foodstuffs	150	150	150	150	-	-	150	150
Total per week	18610	20970	24675	30975	12280	12695	14447	16907
Total per day	2660	2996	3525	4425	1754	1813	2064	2415

*See attached sheet for notes

Notes to Table III

Rations and quantities of other foods consumed taken from J. H. Richter, "Food Rationing in Germany", Foreign Agriculture, October 1941, supplemented by data from Statistiche Jahrbuch 1938 and 1927-28 budget data.

Small numbers over food indicate number of calories per 100 grams.

Flour - half wheat, half rye

Meat - 70% pork, 30% beef - both lean

Cheese - Roquefort, Swiss, and Limburger

Curds - Cottage Cheese

Skimmed milk - est. 1400 gm. per week for all adults.

Potatoes - 6000 gm. for all adults, and 680, 1700, 2410, and 3100 grams for children. Average per cap. consumption assumed 60 percent above pre war.

Legumes - Average per cap. consumption 44 gm. with workers and children 6-14 consuming 85 gm., "normal" consumers none, and young children 42 gm.

Vegetables, fruit, tropical fruit, nuts - Assumed weekly average per cap. consumption of vegetables in 1940-41 to be 1000 gm., fruit 300 gm., and tropical fruit 140 gm. These amounts compare with 986,706, and 139 gm. - average weekly consumption for 1933-37 (Statistiche Jahrbuch) 1938. For details of consumption changes, see Table V

Fish - 148 gm. salted herring

Other Foodstuff - Arbitrarily set at something less than 1 percent of total calories for all groups considered together.

TABLE IV

Estimated Protein and Calcium Content of German Diets, June 2, 1940
(grams per week)

	WORKERS				CHILDREN			
	Normal Consumers	Long and Night	Heavy	Extra Heavy	0 - 3	3 - 6	6 - 10	10
PROTEIN								
Flour equivalent 13%	300	375	474	600	183	183	231	345
Meat 18%	72	108	144	180	45	45	72	72
Potatoes 2%	129	129	129	129	14	14	14	14
Legumes 25%	0	12	12	12	6	6	12	12
Cheese 25%	16	16	16	16	16	16	16	16
Curds 19%	6	6	6	6	-	-	-	-
Fish 20%	29	29	29	29	3	6	18	24
Whole Milk 27%	-	-	-	-	184	123	61	61
Eggs 13%	8	8	8	8	8	8	8	8
Total protein per week	560	683	818	980	459	401	432	552
Total " " day	80	98	117	140	66	57	62	79
CALCIUM								
Fish	.13	.13	.13	.13	-	.13	.13	.13
Flour equivalent	.70	.88	1.11	1.40	.43	.43	.54	.81
Milk and cheese	1.18	1.18	1.18	1.18	6.70	4.50	2.50	2.50
Lentils	-	.09	.09	.09	.05	.05	.09	.09
Potatoes	.71	.71	.71	.71	.09	.20	.28	.31
Fruits and vegetables	.75	.59	.59	.59	.75	.75	.75	.75
Total calcium per week	3.47	3.58	3.81	4.10	8.02	6.06	4.29	4.59
Total " " day	.50	.51	.54	.59	1.15	.87	.61	.66

Protein and calcium estimated on the basis of same kinds and quantities of foods described in notes to Table III

Percentages over specific foods indicate proportions of protein in a given weight (waste deducted). Calcium also calculated on a weight basis, using Bureau of Home Economics figures

TABLE IVb

Estimated Iron Content of German Diets, June 2, 1941
(grams per week)

		WORKERS			CHILDREN			
	Normal Consumers	Long Night	Heavy	Extra Heavy	0 - 3	3 - 6	6 - 10	10 - 14
Meat and fish	.01179	.01754	.02329	.02904	.00719	.00748	.01179	.01179
Flour	.04092	.05115	.06465	.08184	.02496	.02496	.03151	.04706
Potatoes	.05600	.05600	.05600	.05600	.00600	.01500	.02200	.02500
Lentils	-	.00750	.00750	.00750	.00375	.00375	.00750	.00750
Fruits & vegetables	.01129	.00817	.00817	.00817	.00230	.00497	.00836	.01062
Milk	-	-	-	-	.01260	.00840	.00700	.00700
Eggs	.00200	.00200	.00200	.00200	.00200	.00200	.00200	.00200
Total iron per week	.12200	.14236	.16161	.18455	.06880	.06656	.09016	.11097
Total " " day	.01743	.02034	.02309	.02636	.00840	.00951	.01288	.01585
Required per day	.01500	.01500	.01500	.01500	.00600	.00800	.01100	.01300

CLASSIFICATION
Changed to
UNCLASSIFIED
by authority of
OIR list 2/1/46
By AT
Date 7/24/46